

SEQUENCE LISTING

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<110>  VIITANEN, PAUL V.
        MEYER, KNUT
        VAN DYK, DREW

<120>  HIGH LEVEL PRODUCTION OF P-HYDROXYBENZOIC ACID
        IN GREEN PLANTS

<130>  BC1015 US NA

<140>
<141>

<160>  16

<170>  MICROSOFT OFFICE 97

<210>  1
<211>  32
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence:PRIMER

<400>  1
ctactcattt catatgtcac accccgcgtt aa                                     32

<210>  2
<211>  34
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence:PRIMER

<400>  2
catcttacta gatcttttagt acaacgggtga cgcc                                     34

<210>  3
<211>  495
<212>  DNA
<213>  Unknown Organism

<220>
<223>  Description of Unknown Organism:E. coli

<400>  3
atgtcacacc ccgcgttaac gcaactgcgt gcgctgcgct attgtaaaga gatccctgcc 60
ctggatccgc aactgctcga ctggctgttg ctggaggatt ccatgacaaa acgttttgaa 120
cagcagggaa aaacggtaag cgtgacgatg atccgcgaag ggtttgtcga gcagaatgaa 180
atccccgaag aactgccgct gctgccgaaa gagtctcggt actgggttacg tgaaattttg 240
ttatgtgccg atggtgaacc gtggcttgcc ggtcgtaccg tcgttctgtg gtcaacgtta 300
agcggggccg agctggcggt acaaaaattg ggtaaaacgc cgttaggacg ctatctgttc 360
acatcatcga cattaaccgc ggactttatt gagataggcc gtgatgccgg gctgtggggg 420
cgacgttccc gcctgcgatt aagcggtaaa ccgctgttgc taacagaact gtttttaccg 480
gcgtcacctg tgtac                                                         495

<210>  4
<211>  165
<212>  PRT
<213>  Unknown Organism

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<220>
 <223> Description of Unknown Organism:E. coli

<400> 4
 Met Ser His Pro Ala Leu Thr Gln Leu Arg Ala Leu Arg Tyr Cys Lys
 1 5 10 15
 Glu Ile Pro Ala Leu Asp Pro Gln Leu Leu Asp Trp Leu Leu Leu Glu
 20 25 30
 Asp Ser Met Thr Lys Arg Phe Glu Gln Gln Gly Lys Thr Val Ser Val
 35 40 45
 Thr Met Ile Arg Glu Gly Phe Val Glu Gln Asn Glu Ile Pro Glu Glu
 50 55 60
 Leu Pro Leu Leu Pro Lys Glu Ser Arg Tyr Trp Leu Arg Glu Ile Leu
 65 70 75 80
 Leu Cys Ala Asp Gly Glu Pro Trp Leu Ala Gly Arg Thr Val Val Pro
 85 90 95
 Val Ser Thr Leu Ser Gly Pro Glu Leu Ala Leu Gln Lys Leu Gly Lys
 100 105 110
 Thr Pro Leu Gly Arg Tyr Leu Phe Thr Ser Ser Thr Leu Thr Arg Asp
 115 120 125
 Phe Ile Glu Ile Gly Arg Asp Ala Gly Leu Trp Gly Arg Arg Ser Arg
 130 135 140
 Leu Arg Leu Ser Gly Lys Pro Leu Leu Leu Thr Glu Leu Phe Leu Pro
 145 150 155 160
 Ala Ser Pro Leu Tyr
 165

<210> 5
 <211> 39
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer

<400> 5
 ctactcattt agatctccat ggcttcctct gtcatttct 39

<210> 6
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer

<400> 6
 catcttactc atatgccaca cctgcatgca gc 32

<210> 7
 <211> 684
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:synthetic CPL

<400> 7

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atggcttcct ctgtcatttc ttcagcagct gttgccacac gcagcaatgt tacacaagct 60
agcatgggtg cacctttcac tggctctcaa tcttcagcca ctttcctgt tacaaagaag 120
caaaaccttg acatcacttc cattgctagc aatgggtgaa gagttagctg catgcagggtg 180
tggcatatgt cacaccccg cgttaacgcaa ctgctgctgc tgcgctattg taaagagatc 240
cctgcccttg atccgcaact gctcgactgg ctgttgctgg aggattccat gacaaaacgt 300
tttgaacagc agggaaaaac ggtaagcgtg acgatgatcc gcgaagggtt tgtcgagcag 360
aatgaaatcc ccgaagaact gccgctgctg ccgaaagagt ctcgttactg gttacgtgaa 420
atcttggtat gtgccgatgg tgaaccgtgg cttgccggtc gtaccgtcgt tcctgtgtca 480
acgttaagcg ggccggagct ggcgttacaa aaattgggta aaacgccgtt aggacgctat 540
ctgttcacat catcgacatt aaccggggac tttattgaga taggccgtga tgccgggctg 600
tgggggcgac gttcccgctt gcgattaagc ggtaaaccgc tgttgctaac agaactgttt 660
ttaccggcgt caccgttgta ctaa 684
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<210> 8

<211> 227

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:synthetic CPL

<400> 8

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Met ala Ser Ser Val Ile Ser Ser Ala Ala Val Ala Thr Arg Ser Asn
 1                5                10                15

Val Thr Gln Ala Ser Met Val Ala Pro Phe Thr Gly Leu Lys Ser Ser
      20                25                30

Ala Thr Phe Pro Val Thr Lys Lys Gln Asn Leu Asp Ile Thr Ser Ile
      35                40                45

Ala Ser Asn Gly Gly Arg Val Ser Cys Met Gln Val Trp His Met Ser
      50                55                60

His Pro Ala Leu Thr Gln Leu Arg Ala Leu Arg Tyr Cys Lys Glu Ile
      65                70                75                80

Pro Ala Leu Asp Pro Gln Leu Leu Asp Trp Leu Leu Leu Glu Asp Ser
      85                90                95

Met Thr Lys Arg Phe Glu Gln Gln Gly Lys Thr Val Ser Val Thr Met
      100                105                110

Ile Arg Glu Gly Phe Val Glu Gln Asn Glu Ile Pro Glu Glu Leu Pro
      115                120                125

Leu Leu Pro Lys Glu Ser Arg Tyr Trp Leu Arg Glu Ile Leu Leu Cys
      130                135                140

Ala Asp Gly Glu Pro Trp Leu Ala Gly Arg Thr Val Val Pro Val Ser
      145                150                155                160

Thr Leu Ser Gly Pro Glu Leu Ala Leu Gln Lys Leu Gly Lys Thr Pro
      165                170                175

Leu Gly Arg Tyr Leu Phe Thr Ser Ser Thr Leu Thr Arg Asp Phe Ile
      180                185                190

Glu Ile Gly Arg Asp Ala Gly Leu Trp Gly Arg Arg Ser Arg Leu Arg
      195                200                205
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Leu Ser Gly Lys Pro Leu Leu Leu Thr Glu Leu Phe Leu Pro Ala Ser
210 215 220

Pro Leu Tyr
225

<210> 9
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 9
ctactcattt gaagactgca tgcaggtgtg gcat 34

<210> 10
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 10
catcttactg tcgacttttag tacaacggtg acgc 34

<210> 11
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 11
ctactcattt ggccagctct gtcatttctt cagcagc 37

<210> 12
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 12
catcttacta gatcttttagt acaacggtga c 31

<210> 13
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer

<400> 13
cccgggggta cctaaagaag gagtgcgtcg aag 33

<210> 14
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer

<400> 14
 gatatcaagc tttctagagt cgacatcgat ctagtaacat agatga 46

<210> 15
 <211> 62
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:synthetic CPL

<400> 15
 Met Ala Ser Ser Val Ile Ser Ser Ala Ala Val Ala Thr Arg Ser Asn
 1 5 10 15
 Val Thr Gln Ala Ser Met Val Ala Pro Phe Thr Gly Leu Lys Ser Ser
 20 25 30
 Ala Thr Phe Pro Val Thr Lys Lys Gln Asn Leu Asp Ile Thr Ser Ile
 35 40 45
 Ala Ser Asn Gly Gly Arg Val Ser Cys Met Gln Val Trp His
 50 55 60

<210> 16
 <211> 170
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:synthetic CPL

<400> 16
 Met Gln Val Trp His Met Ser His Pro Ala Leu Thr Gln Leu Arg Ala
 1 5 10 15
 Leu Arg Tyr Cys Lys Glu Ile Pro Ala Leu Asp Pro Gln Leu Leu Asp
 20 25 30
 Trp Leu Leu Leu Glu Asp Ser Met Thr Lys Arg Phe Glu Gln Gln Gly
 35 40 45
 Lys Thr Val Ser Val Thr Met Ile Arg Glu Gly Phe Val Glu Gln Asn
 50 55 60
 Glu Ile Pro Glu Glu Leu Pro Leu Leu Pro Lys Glu Ser Arg Tyr Trp
 65 70 75 80
 Leu Arg Glu Ile Leu Leu Cys Ala Asp Gly Glu Pro Trp Leu Ala Gly
 85 90 95
 Arg Thr Val Val Pro Val Ser Thr Leu Ser Gly Pro Glu Leu Ala Leu
 100 105 110
 Gln Lys Leu Gly Lys Thr Pro Leu Gly Arg Tyr Leu Phe Thr Ser Ser
 115 120 125
 Thr Leu Thr Arg Asp Phe Ile Glu Ile Gly Arg Asp Ala Gly Leu Trp
 130 135 140

Gly	Arg	Arg	Ser	Arg	Leu	Arg	Leu	Ser	Gly	Lys	Pro	Leu	Leu	Leu	Thr
145					150					155					160
Glu	Leu	Phe	Leu	Pro	Ala	Ser	Pro	Leu	Tyr						
				165					170						